REMARKS

The Applicants appreciate the Examiner's thorough review of the present application as evidenced by the Office Action of October 24, 2001. The Applicants also appreciate the Examiner's comments and suggestions as provided in the teleconferences held on January 10 and January 22. Reconsideration of the present application is requested in light of the above amendments and the following remarks, which are responsive to the outstanding Office Action and which incorporate the Examiner's suggestions to further clarify the present invention. Following the amendments, claims 2-6, 8-15, 21-29 remain pending and new claims 30-41 have been added. The Applicants do not believe that any of these amendments or new claims have added new matter to the claims.

Response to Rejections Under 35 U.S.C. § 103

In the Office Action, Claim 1-3, 7, 9, 13, 20-22, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the U.S. Patent No. 5,943,047 to Susuki ("Suzuki") in view of U.S. Patent No. 5,771,435 to Brown ("Brown"). According to the Office Action, Susuki discloses a bandwidth allocation manager for determining bandwidth allocation in a digital broadband delivery system, but fails to disclose that the bandwidth allocation manager dynamically assigns at least two content delivery modes to a plurality of digital transmission channels based at least partially on an allocation criteria received from a subscriber. The Office Action relies on the Brown patent as disclosing a hybrid NVOD and VOD system wherein a requester is directed to view a NVOD time-staggered version of a program when a subscriber requests a VOD program that strains system resources. According to the Office Action, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Suzuki to include the claimed two different content delivery modes to have an option of switching to an NVOD time staggered broadcast to accommodate a greater number of subscribers when necessary to avoid straining system bandwidth. This combination, according to the Examiner, would render obvious the invention claimed in independent claims 1, 7, and 19.

New Claims 30-32

After consultation with the Examiner, the Applicants have canceled independent claims 1, 7, and 19 and have submitted new independent claims 30, 31, and 32 in order to clarify the scope of the present invention and recite more clearly the aspects of the present invention that distinguish it over the prior art in general and Suzuki and Brown in particular. Although new claims 30-32 have been worded differently than original claims 1, 7, and 19, the Applicants do not believe that these new claims differ in scope from the original claims. Instead, new claims 30-32 have been reworded to clarify the scope of the invention as originally recited. Specifically, new independent claims 30-32 recite that the bandwidth allocation manager dynamically assigns at least two different content delivery modes to a plurality of digital transmission channels based on at least one allocation criteria received from a subscriber, thereby dynamically adjusting the bandwidth allocated to one or more of the at least two content delivery modes. The recited language was considered by the Examiner in a telephonic interview and the Examiner agreed that this language was likely to distinguish the Susuki patent and the other cited references.

Accordingly, the Applicant's respectfully submit that new claims 30-32 recite features that are not disclosed or suggested in the prior art and should therefore be allowed.

New Claims 33-35

New claims 33-35 recite that the bandwidth allocation manager broadcasts video content at irregular times in order to accommodate a plurality of different subscriber requests using bandwidth previously allocated to another content delivery mode. As an example of the benefits of this novel feature, consider a bandwidth allocation schedule whereby a pay-per-view program is scheduled to be broadcast at 8:00 and 8:30. At 8:10, several subscribers request to view the 8:30 program but no subscriber has requested to view the 8:00 program. Under traditional systems, the subscriber would have to wait until 8:30 to view the program.

In contrast, under the present invention as recited in new claims 33-35, the bandwidth allocation manager may elect to cancel the 8:00 broadcast of the program and instead use the bandwidth previously allocated to that broadcast to broadcast the program at 8:10, thereby immediately satisfying the subscriber requests. It will be appreciated that such flexibility will increase subscriber satisfaction and make the most efficient use of the available

bandwidth because unused bandwidth may be recaptured and used to fulfill subscriber demands.

The novel feature recited in new claims 33-35 was brought to the Examiner's attention in the telephonic interview held on January 22, 2002 and the Examiner tentatively agreed that none of the cited references appeared to disclose this novel feature. Accordingly, it is believed that new claims 33-35 are in condition for allowance because they recite features that are not disclosed or suggested in the prior art.

Independent Claim 14 and New Claims 36, 37 and 38

In the Office Action, the Examiner rejected independent claim 14 as being unpatentable over Susuki in view of U.S. Patent No. 6,108,002 to Ishizaki ("Ishizaki"). According to the Examiner, Ishizaki discloses an interface for receiving a subscriber request for an on demand program by specifying the date and time for delivery. The Examiner contends that it would have been obvious to combine Ishizaki with Suzuki in order to arrive at the invention recited in claim 14.

In response to this rejection, the Applicants have amended claim 14 to recite that the allocation criteria received from the subscriber "comprises a subscriber reservation request comprising at least two subscriber preference sets, wherein each subscriber preference set identifies a content delivery mode and wherein the subscriber assigns a priority to each preference set indicating the subscriber's relative desire for each preference set to be fulfilled." This feature enables a subscriber to request several different content delivery modes for viewing a particular program and to assign a priority to each content delivery mode indicating the subscriber's preference. Advantageously, this feature allows a user to request a VOD program if available and to identify one or more alternative content delivery modes in the event that the a VOD content delivery mode is not available. This also enables the bandwidth allocation manager to take the subscriber's preferences into account in allocating the available bandwidth, thereby increasing the likelihood that a subscriber reservation request can be fulfilled satisfactorily. Neither Suzuki nor Ishizaki disclose or suggest this feature. Accordingly, the Applicants respectfully submit that claim 14 is in condition for allowance.

The Applicants have also submitted new independent claims 36-38, all of which recite this novel feature. As such, these claims are allowable for the same reasons set forth above with respect to claim 14.

New Claims 39, 40 and 41

New claims 39-41 have features similar to those recited in dependent claims 6, 12, and 25, but also include an additional novel feature wherein the bandwidth allocation manager processes a plurality of allocation criteria according to a statistical model, wherein the statistical model assigns a weight to each of the allocation criteria and "wherein the assigned weight is selected in order to achieve an optimal bandwidth allocation."

With respect to dependent claims 6, 12, and 25, the Examiner stated that the concept of a statistical model was taught by the combination of Suzuki in view of Brown, and further in view of U.S. Patent No. 5,835,843 to Haddad ("Haddad"). None of these references, however, disclose or suggest that a statistical model factors in a plurality of criteria and assigns weights to each criteria in order to achieve an optimal bandwidth allocation as recited in new claims 39-41. Haddad, at most, discloses that subscriber requests may be processed in the order received. It does not disclose that a statistical model is used to achieve an optimal bandwidth allocation by assigning a specific weight to each allocation criteria, wherein the assigned weight is selected to achieve the desired optimal bandwidth allocation. As such, new claims 39-41 are disclose features that are not disclosed or suggested in the prior art. The Applicants therefore submit that these claims are in condition for allowance.

Claims 27-29

In the Office Action, the Examiner indicated that dependent claims 27-29 would be allowable if presented in independent form. Accordingly, the Applicants have rewritten claims 27-29 in independent form, including all of the limitations recited in the base claims and any intermediate claims. The Applicants therefore submit that these claims are now in condition for allowance.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 19-0761.

Respectfully submitted,

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_____
Maryellen Licker

Version with Markings to Show Changes Made:

2. (Twice Amended) The bandwidth allocation manager of claim [1] 30, wherein the at least two different content delivery modes are selected from the group consisting of broadcast, pay-per-view, video-on-demand, and near video-on-demand.

3. (Twice Amended) The bandwidth allocation manager of claim [1] 30, wherein at least one content delivery mode comprises a video content delivery mode wherein at least three instances of a same video content are transmitted at time-spaced intervals of varying length.

4. (Twice Amended) The bandwidth allocation manager of claim [1] 30, wherein the allocation criteria received from the subscriber comprises a subscriber reservation request identifying a date and time that the subscriber wishes to reserve for viewing a program in the future.

5. (Once Amended) The bandwidth allocation manager of claim [1] 30, wherein the allocation criteria received from the subscriber comprises a plurality of subscriber reservation requests with at least two assigned priorities.

6. (Twice Amended) The bandwidth allocation manager of claim [1] 30, wherein the bandwidth allocation manager processes a plurality of allocation criteria according to a statistical model to determine an adjusted bandwidth allocation schedule, wherein the statistical model assigns a weight to each of the allocation criteria, and wherein the assigned weight determines the priority given to each allocation criteria.

8. (Once Amended) The bandwidth allocation system of claim [7] 31, wherein the VOD application server in communication with the bandwidth allocation manager, wherein the VOD application server transmits a list of available content delivery modes to the bandwidth allocation manager.

9. (Twice Amended) The bandwidth allocation system of claim [7] 31, wherein the at least two different content delivery modes are selected from the group consisting of broadcast, pay-per-view, video-on-demand, and near video-on-demand.

10. (Twice Amended) The bandwidth allocation system of claim [7] 31, wherein the allocation criteria received from the subscriber comprises a subscriber reservation request identifying a date and time that the subscriber wishes to reserve for viewing a program in the future.

11. (Once Amended) The bandwidth allocation system of claim [7] 31, wherein the allocation criteria received from a subscriber comprises a plurality of subscriber reservation requests with at least two assigned priorities.

12. (Twice Amended) The bandwidth allocation system of claim [7] 31, wherein the bandwidth allocation manager processes a plurality of allocation criteria according to a statistical model to determine a bandwidth allocation schedule, wherein the statistical model assigns a weight to each of the allocation and wherein the assigned weight determines the priority given to each allocation criteria.

13. (Twice Amended) The bandwidth allocation system of claim [7] 31, wherein at least one content delivery mode comprises a video content delivery mode wherein at least three instances of a same video content at time-spaced intervals of varying length.

14. (Twice Amended) A digital home communication terminal for use in a digital broadband delivery system containing a bandwidth allocation manager comprising:

an interface that receives a subscriber reservation request comprising at least two subscriber preference sets, wherein each subscriber preference set identifies a content delivery mode and wherein the subscriber assigns a priority to each preference set indicating the subscriber's relative desire for each preference set to be fulfilled, [identifying a date and time that the subscriber wishes to reserve for viewing a program in the future];

a tuner that transmits the subscriber criteria to the bandwidth allocation manager for use in dynamically allocating bandwidth in the digital broadband delivery system.

21. (Twice Amended) The method of claim [19] 32, wherein the at least two different content delivery modes are selected from the group consisting of broadcast, pay-per-view, video-on-demand, and near video-on-demand.

22. (Twice Amended) The method of claim [19] 32, wherein at least one content delivery mode comprises a content delivery mode wherein as least three instances of a same video content are transmitted at predetermined time-spaced intervals of varying length.

23. (Twice Amended) The method of claim [19] 32, wherein receiving an allocation criteria from a subscriber comprises receiving an allocation criteria comprising a subscriber reservation request identifying a date and time that the subscriber wishes to reserve for viewing a program in the future.

24. (Once Amended) The method of claim [19] 32, wherein receiving the allocation criteria received from a subscriber comprises receiving an allocation criteria comprising a plurality of subscriber reservation requests with at least two assigned priorities.

25. (Twice Amended) The method of claim [19] 32, wherein dynamically adjusting a bandwidth allocation schedule includes processing the allocation criteria according to a statistical model, wherein the statistical model assigns a weight to each of the allocation criteria and wherein the assigned weight determines the priority given to each allocation criteria.

26. (Once Amended) The method of claim [19] 32, further comprising allocating bandwidth in the digital broadband delivery system according to the bandwidth allocation schedule.

27. (Once Amended) A bandwidth allocation manager for determining bandwidth

allocation in a digital broadband delivery system, wherein the bandwidth allocation manager dynamically assigns at least two different content delivery modes to a plurality of digital transmission channels based at least partially on a subscriber reservation request comprising a date and time that the subscriber wishes to reserve for viewing a program in the future, [The bandwidth allocation manager of Claim 4, wherein the subscriber reservation request comprises] a plurality of subscriber preferences identifying a preferred content delivery mode and a price the subscriber is willing to pay to have the reservation request fulfilled.

28. (Once Amended) A bandwidth allocation system in a digital broadband delivery system comprising:

a bandwidth allocation manager that determines a bandwidth allocation schedule in the digital broadband delivery system based at least partially on a subscriber reservation request, [The bandwidth allocation system of claim 7]wherein the subscriber reservation request comprises a plurality of subscriber preferences identifying a preferred content delivery mode and a price the subscriber is willing to pay to have the reservation request fulfilled; and

a network manager in communication with the bandwidth allocation manager, where the network manager allocates bandwidth according to the bandwidth allocation schedule determined by the bandwidth allocation manager.

29. (Once Amended) A digital home communication terminal for use in a digital broadband delivery system containing a bandwidth allocation manager comprising:

an interface that receives a subscriber reservation request identifying a date and time that the subscriber wishes to reserve for viewing a program in the future [The digital home communication terminal of claim 14], wherein the subscriber reservation request comprises a plurality of subscriber preferences identifying a preferred content delivery mode and a price the subscriber is willing to pay to have the reservation request fulfilled; and

a tuner that transmits the subscriber criteria to the bandwidth allocation manager for use in dynamically allocating bandwidth in the digital broadband delivery system.